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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/615,399	07/09/2003	Daijiro Kodama	Q76476	8466

23373 7590 06/08/2006
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EXAMINER

ANGEBRANNDT, MARTIN J

ART UNIT	PAPER NUMBER
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1756

DATE MAILED: 06/08/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/615,399	Applicant(s) KODAMA, DAIJIRO	
	Examiner Martin J. Angebrannt	Art Unit 1756	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 24 March 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-16 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-16 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

1. The response of the applicant has been read and given careful consideration. Responses to the arguments are presented after the first rejection to which they are directed. Rejections of the previous office action, not repeated below are withdrawn based upon the arguments and amendments.

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 1-14 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

It is not clear what is meant by “light that diffuse in only a direction crossing at right angles with said section”. Does this mean both beams are incident from the same side and the angle between them is orthogonal to the plane of the film or is this the case where one beams is incident from each side ? The diffuse language is particularly confusing as no diffusion element is recited. (claims 4 and 13). To have diffusion, there must be a diffusion element recited. Also the orientation of the diffuser seems to be important. The rejection stands.

The claims should include a recitation of the interaction of the resultant holograms upon replay, otherwise they fail to patentably distinguish themselves from other angularly multiplexed holograms. (ie the reconstruction field of view (figure 6) [0049+], moiré fringe generation [0068], color variation with changing viewing angle [0061], etc ...). (claims 1 and 9). Otherwise the claims could fail to define themselves over the prior art based upon the images being treated similarly to “written matter” or a mere design choice. **The functionality of the images beyond a mere aesthetic choice of pattern or the like will also reduce the issues**

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standing in the way of patentability in terms of rendering some of the prior art less applicable.

In claim 9, “reference beams with diffracted light beams” should read - - reference beams with object beams- - (the image is recorded by the interference of the object and reference beams, to form a diffraction pattern, which is visualizable using a replay beam, which is diffracted by the hologram). Please see [0010,0041,0042,0048] in the specification. The text “the diffracted light beams being created by the reference light beams” is non-sensible and should be deleted. In this embodiment, there is a single reference beam and the object beams are incident at different angles, which results in the different replay angles shown in figure 4a and 4b.

In claim 1, “reference beams with diffracted light beams” should read - - different reference beams with different object beams- - (the image is recorded by the interference of the object and reference beams, to form a diffraction pattern, which is visualizable using a replay beam, which is diffracted by the hologram). Please see [0012,0041,0042,0048] in the specification. The text “the diffracted light beams being created by the reference light beam, and having mutually different angles of incidence, and” is non-sensible and should be modified to make it clear that the reference and object beams for each image being produced have the same wavelength and angle of incidence, but the reference and object beams for different images have different angles of incidence.

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

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(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 9-13 are rejected under 35 U.S.C. 102(b) as being fully anticipated by Davis et al. '092.

The example taught with respect to figure 1 shows angularly multiplexed holograms of the mirrors 16,17 and 18 with the exposure controlled through shutters 12,13,14 to modulate the beams 24,25,26 using the single reference beam 23.

The reference beam is the same for each hologram and beams 24,25 and 26 have the same wavelength (divided from the same beam as beam 23) and each have a different angle of incidence. The applicant fails to appreciate that a grating is in fact a holographic mirror or plane. There are differences in the references, which the applicant may exploit to obviate one, but not the others and the examiner has cited references, which are not applied in a rejection. The rejections are not merely cumulative. It may be that the applicant's invention concerns the interaction of the two holograms and so focusing the scope of the claims to articulate this, rather than merely directing the claims to angularly multiplexed holograms would reduce the issues. The embodiments relating to claims 15 and 1 are much more likely to result in patentable subject matter. The rejection stands.

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7. Claims 9-13 are rejected under 35 U.S.C. 102(b) as being fully anticipated by Redman et al. '484.

Redman et al. '484 teach with respect to figure 10, the case where a single reference beam is applied at a constant angle and the object beams are at different angles. (5/1-17).

The rejection stands for the reasons above without further comment.

8. Claim 15-16 are rejected under 35 U.S.C. 102(b) as being fully anticipated by Nishikawa et al. JP-11-024538.(machine translation attached)

Nishikawa et al. JP-11-024538 teach a volume hologram with a two holograms both in the same holographic recording medium so that they replay at the same time including both planar and three dimensional information (figure 4). [0008]. The planar hologram has additional information for authentication, results from a desensitization of the master and may use moire' patterns [0008].

Both images are present. No other arguments are presented.

9. Claims 9-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takabayashi et al. EP 1045296, in view of Nishikawa et al. JP-11-024538.

Takabayashi et al. EP 1045296 teach a volume hologram with a transmission hologram and a reflection holograms both in the same holographic recording medium so that they are simultaneously replayed [0035]. . These include a planar image and a three dimensional image (figures 7 and 11). The recording a various planar images which replay at the same time is also disclosed with respect to figure 7. The volume hologram is a photopolymer [0024]. The use of multicolor recording is disclosed throughout. The planar images are formed by a desensitization as shown in figure 1.

It would have been obvious to one skilled in the art to modify the teachings of Takabayashi et al. EP 1045296 by using a desensitization which results in moiré fringes upon replay as taught by Nishikawa et al. JP-11-024538 with a reasonable expectation of realizing the increased authentication ability ascribed to this by Nishikawa et al. JP-11-024538.

10. Claims 1-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takabayashi et al. EP 1045296, in view of Nishikawa et al. JP-11-024538, further in view of Ueda et al. '540.

Ueda et al. '540 teach in example 19 a holographic recording materials with a mirrored backing. The first exposure is at 30 degrees, the second at 50 degrees and the third at 70 degrees. Due to the principles of retroreflection and the coupling of the mirror to the back of the recording medium, the reference and object beam angles are the same for each of the exposures, but the angles are different between the exposures. Therefore the fringe spacing is different for each exposure to form different colors.

It would have been obvious to modify the combination of Takabayashi et al. EP 1045296 and Nishikawa et al. JP-11-024538 by changing the angles between the exposures as taught by Ueda et al. '540 between the various exposures of the planar images to produce a multicolored background with a reasonable expectation of success.

11. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after

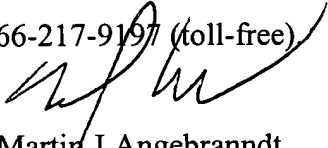
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the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Martin J. Angebranndt whose telephone number is 571-272-1378. The examiner can normally be reached on Monday-Thursday and alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark Huff can be reached on 571-272-1385. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Martin J Angebranndt
Primary Examiner
Art Unit 1756

06/05/2006